NC Mechanical Code

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100 Chapter 1 Administration

102.4 - Question: Contractor has an existing hood in a home, the kitchen is being remodeled and the cabinets are being replaced. The existing hood will be removed, new cabinets installed, the electrical and exhaust duct will remain in place and the hood will be re-installed. There is currently no make up air being supplied, will taking down the hood and re-installing it require make up air to be provided?

Answer: No, if the installation of the hood was code compliant under the code is was installed under, there is no need to update the installation for a minor alteration.

102.4 Additions, alterations or repairs. Additions, alterations, renovations or repairs to a mechanical system shall conform to that required for a new mechanical system without requiring the existing mechanical system to comply with all of the requirements of this code. Additions, alterations or repairs shall not cause an existing mechanical system to become unsafe, hazardous or overloaded.

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Minor additions, alterations, renovations and repairs to existing mechanical systems shall meet the provisions for new construction, unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous and is approved.

200 Chapter 2 Definitions

300 Chapter 3 General Regulations

301.4 - Question: A ventless firebox installation for a two sided fireplace is in an assembly area. The gas code would prohibit the installation in assembly occupancies per 621.4 NCFGC, however, this is a bio-fuel so I think it would be regulated by the Mechanical Code per 101.2.5 NCFGC. The mechanical code section 301.4 would, at a minimum, requires an appliance to be listed and labeled. The logs use denatured alcohol as a fuel source and are not listed. There are natural gas logs for the fire place are listed products. Do logs burning denatured alcohol need to be listed when installed in an enclosed fireplace?

Answer: The UL listing for the 900DB covers the requirement for an approved fire box, however, the firebox is located in an Assembly occupancy, there are further restrictions for the use of Class I fuels for open flame decorative appliances. Denatured alcohol would be a class I liquid. The code reference is NC Fire Prevention Code section 308.3.1

307.2.3 - Question: Is an EZ trap still allowed by code?

Answer: Yes, the 200 series float switches, manufactured by RectorSeal are listed UL508.
See Referenced Letter from RectorSeal at the end of this agenda

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400 Chapter 4 Ventilation

403.3 - Question: Table 403.3 states under public spaces for Elevator Cars, they must be exhausted at a rate of 1.0 cfm/sq ft. Who enforces this?

Answer: Elevators are under the jurisdiction of the North Carolina Department of Labor.

§ 143-139. Enforcement of Building Code. (d) Elevators. - The Department of Labor shall have general supervision of the administration and enforcement of those sections of the North Carolina State Building Code which pertain to elevators, moving stairways, and amusement devices such as merry-go-rounds, roller coasters, Ferris wheels, etc.

500 Chapter 5 Exhaust Systems

501.2 - Question: Can the ventilation of a stationary storage battery system discharge to the return air plenum?

Answer: No, exhaust discharged shall discharge outdoors.

501.2 Exhaust discharge. The air removed by every mechanical exhaust system shall be discharged outdoors at a point where it will not cause a nuisance and not less than the distances specified in Section 501.2.1. The air shall be discharged to a location from which it cannot again be readily drawn in by a ventilating system. Air shall not be exhausted into an attic or crawl space.

501.2.1 #3 - Question: What is the distance from a bath fan vent cap from a fixed window?

Answer: Zero, Section 501.2.1 #3 states environmental air must be 3 feet from operable openings into buildings.

501.2.1 #3 For all environmental air exhaust: 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable openings into buildings for all occupancies other

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than Group U, and 10 feet (3048 mm) from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious

504.8 - Question: A contractor has common exhaust ducts for dryers and wanted to fire wrap the dryer in one hour fire wrap so it would be considered a shaft by code. Is this acceptable?

Answer: Yes. Based on 504.8 Common exhaust systems for clothes dryers located in multistory structures. Where a common multistory duct system is designed and installed to convey exhaust from multiple clothes dryers, the construction of the system shall be in accordance with all of the following:

1. The shaft in which the duct is installed shall be constructed and fire-resistance rated as required by the International Building Code.
2. Dampers shall be prohibited in the exhaust duct. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 2.
3. Rigid metal ductwork shall be installed within the shaft to convey the exhaust. The ductwork shall be constructed of sheet steel having a minimum thickness of 0.0187 inch (0.4712 mm) (No. 26 gage) and in accordance with SMACNA Duct Construction Standards.
4. The ductwork within the shaft shall be designed and installed without offsets.
5. The exhaust fan motor design shall be in accordance with Section 503.2.
6. The exhaust fan motor shall be located outside of the airstream.
7. The exhaust fan shall run continuously, and shall be connected to a standby power source.
8. Exhaust fan operation shall be monitored in an approved location and shall initiate an audible or visual signal when the fan is not in operation.
9. Makeup air shall be provided for the exhaust system.

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10. A cleanout opening shall be located at the base of the shaft to provide access to the duct to allow for cleaning and inspection. The finished opening shall be not less than 12 inches by 12 inches (305 mm by 305 mm).
11. Screens shall not be installed at the termination.

505.2 - Question: Home owner wants to add additional exhaust to the kitchen. The exhaust is not a hood, just an exhaust fan in the ceiling, but it exceeds 400 cfm. Will make up air be required for the additional exhaust since it is not a hood?

Answer: Yes, Section 505.2 states hoods that exceed 400 cfm must be provided with make up air. The intent is to prevent the dwelling from being under excessive negative pressure. Installing an exhaust fan that exceeds 400 cfm will produce the same results as a hood that exhausts 400 cfm.
505.2 Makeup air required. Exhaust hood systems capable of exhausting in excess of 400 cfm (0.19 m3/s) shall be provided with makeup air at a rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

600 Chapter 6 Duct Systems

603.17 - Question: Is access required to volume dampers located in a hard (sheetrock) ceiling? We are starting to see more enclosed ceilings (sheetrock, not lay in tile) because of the new energy code requirements. When volume dampers are installed above the ceiling access is required per 603.17. I believe the access is provided only to adjust the damper and is not intended to access the damper itself. It only serves as a means of adjustment. I am not requiring direct access for adjustment of volume dampers as long as remote access is provided. Access doors at each volume damper really make for a very ugly ceiling. The Architect would

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like to avoid this if possible. Will Mecklenburg County require access to each volume damper or will you approve the adjustment access only?

Answer: No. The remote access controls will meet the intent of the code. DOI actually recommend people use these where they have very tall ceilings or remote diffuser locations that would be difficult to access via a ceiling tile or access panel. Plus they have the added benefit of being so user-friendly there is a better chance of the system actually getting balanced correctly. They are more likely to actually stay put once the balancing is done. The McKimmon center at NC State, where the Building Code Council meets, has these.

607.5.5 #2 - Question: When you have a shaft that complies with 607.5.5 #2. The sub ducts have to extend into the shaft a minimum of 22 inches and be made out of 26 gage. The last line of the section states, "the exhaust fan is powered continuously in accordance with the provisions of Section 909.11 of the International Building Code, and maintains airflow upward to the outdoors." Section 909.11 requires an approved standby power source. Does this mean they must install a generator? Can they use batteries?

Answer: Section 909.11 of the Building Code requires an approved standby power source. This is typically a generator, but if there is no other requirement of a standby power source other than the fan for the shaft, a battery system may be used. They battery will need to have the capacity to run the fan at full volume for no less than 90 minutes.

607.5.5 - Question: Is there a reference in the code that specifically disallows a fire damper to be installed in a Type II hood exhaust duct that penetrates a rated wall?

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Answer: No. A fire damper will be allowed by the commercial code. An issue with residential is there may not be a fire damper that will work for the given situation. Even with the commercial code, It is not necessarily the best solution, but in our code, NCMC 607.5.5 Exception 5 addresses fire dampers that are not required if installed in accordance with the code. Of course, what that is saying is there is usually a shaft or other means of protecting the kitchen exhaust ductwork that penetrates a rated assembly. The fire damper still has to be suited for the exhaust stream it is going to be located in. Residential ranges are typically going into a rated floor/ceiling assembly and would require a radiation damper.

700 Chapter 7 Combustion Air

800 Chapter 8 Chimneys & Vents

900 Chapter 9 Specific Appliances

1000 Chapter 10 Boilers & Water Heaters

1100 Chapter 11 Refrigeration

1200 Chapter 12 Hydronic Systems

1300 Chapter 13 Fuel Oil Piping

1400 Chapter 14 Solar Systems

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Policy

Other